

Claim Amendments

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims

Claim 1. (Currently Amended) A radiation-curable urethane (meth)acrylate ~~obtainable obtained~~ by a process, comprising:

- a) partly reacting an alkoxylated polyol (A) with (meth)acrylic acid (B) in the presence of at least one esterification catalyst (C) and at least one polymerization inhibitor (D) and, ~~also if desired optionally~~, a solvent (E) that forms an azeotrope with water;
- b) ~~during or after step (a), optionally removing if desired~~ at least some of the water formed in a) from the reaction mixture;
- f) ~~optionally neutralizing if desired~~ the reaction mixture;
- h) ~~optionally removing if desired~~ any solvent (E) ~~used~~ by distillation; and/or
- i) ~~optionally stripping if desired the treated reaction mixture~~ with a gas which is inert under the reaction conditions and ~~optionally removing excess acrylic acid by distilling distillation;~~
- k) reacting the reaction mixture obtained after ~~the last of the above steps step i)~~ with a compound (G) containing at least two epoxy groups, optionally in the presence of a catalyst (H); and
- l) reacting the reaction mixture from step (k) with at least one polyisocyanate compound (J) and at least one hydroxyalkyl(meth)acrylate (K) and, ~~optionally if desired~~ with at least one further compound (M) comprising one or more isocyanate-reactive groups,

optionally in the presence if desired of a catalyst (L).

Claim 2. (Canceled)

Claim 3. (Previously Presented) The radiation-curable urethane (meth)acrylate as claimed in Claim 1, wherein the reaction mixture in step (k) has an acid number to DIN EN 3682 of up to 200 mg KOH/g and an OH number to DIN 53240 of up to 120 mg KOH/g.

Claim 4. (Currently Amended) The radiation-curable urethane (meth)acrylate as claimed in claim 1, wherein the reaction mixture ~~used in~~ in step (l) has an OH number to DIN 53240 of up to 250 mg KOH/g.

Claim 5. (Currently Amended) The radiation-curable urethane (meth)acrylate as claimed in claim 1, wherein the alkoxylated polyol (A) is a pentaerythritol, trimethylolethane or trimethylolpropane ~~with~~ having from single to 20-fold ethoxylation.

Claim 6. (Previously Presented) The radiation-curable urethane (meth)acrylate as claimed in claim 1, wherein the epoxide compound (G) is bisphenol A diglycidyl ether, 1,4-butanediol diglycidyl ether, trimethylolpropane triglycidyl ether or pentaerythritol tetraglycidyl ether.

Claim 7. (Previously Presented) The radiation-curable urethane (meth)acrylate as claimed in claim 1, wherein the polyisocyanate (J) is 2,4- or 2,6-tolylene diisocyanate or an isomer mixture thereof, hexamethylene diisocyanate, 1,3-bis(isocyanatomethyl)cyclohexane, isophorone diisocyanate or di(isocyanatocyclohexyl)methane.

Claim 8. (Previously Presented) The radiation-curable urethane (meth)acrylate as claimed in claim 1, wherein the hydroxyalkyl (meth)acrylate (K) is 2-hydroxyethyl acrylate or 2-hydroxyethyl methacrylate.

Claims 9 and 10 (Canceled)

Claim 11. (New) The radiation-curable urethane (meth)acrylate as claimed in claim 1, wherein the alkoxylated polyol (A) with (meth)acrylic acid (B) are combined in an (A)/(B) molar ratio of 1: 0.8 – 2.

Claim 12. (New) The radiation-curable urethane (meth)acrylate as claimed in Claim 11, wherein the (A)/(B) molar ratio ranges from 1: 0.75 – 2.5.

Claim 13. (New) The radiation-curable urethane (meth)acrylate as claimed in claim 1, wherein the fluid medium upon esterification of the alkoxylated polyol consists essentially of 20 to 80 % by weight of fully esterified alkoxylated polyol (A), from 20 to 50 % by weight of unesterified or partly esterified alkoxylated polyol (A), from 0.001 % up to 25 % by weight of unreacted (meth)acrylic acid (B), from 0.1 to 5 % by weight of esterification catalyst (C), and from 0.01 to 1 % by weight of polymerization inhibitor (D), and optionally solvent (E), the total of the ingredients being 100 % by weight.

Claim 14. (New) A process for preparing a radiation-curable urethane (meth)acrylate, comprising:

- a) partly reacting an alkoxylated polyol (A) with (meth)acrylic acid (B) in the

presence of at least one esterification catalyst (C) and at least one polymerization inhibitor

(D) and, optionally, a solvent (E) that forms an azeotrope with water;

b) during and after step (a), optionally removing at least some of the water in the reaction mixture;

f) optionally neutralizing the reaction mixture;

h) optionally removing any solvent (E) by distillation; and/or

i) optionally stripping with the treated reaction mixture with a gas which is inert

under the reaction conditions and removing excess acrylic acid by distillation.

k) reacting the reaction mixture with a compound (G) containing at least two epoxy groups, optionally in the presence of a catalyst (H); and

l) reacting the reaction mixture from step (k) with at least one polyisocyanate compound (J) and at least one hydroxyalkyl(meth)acrylate (K) and, optionally with at least one further compound (M) comprising one or more isocyanate-reactive groups, optionally in the presence of a catalyst (L).

Claim 15. (New) A radiation-curable coating composition comprising the radiation-curable urethane (meth)acrylate as claimed in claim 1.

Claim 16. (New) An interior wood-coating material comprising the radiation-curable coating composition as claimed in claim 15.